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SUB-REGIONAL INTEGRATED RESOURCE PLAN



DRAFT PLAN

July 1986



Resource Evaluation and Planning Division

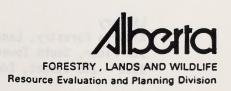


KEG RIVER SUB-REGIONAL INTEGRATED RESOURCE PLAN

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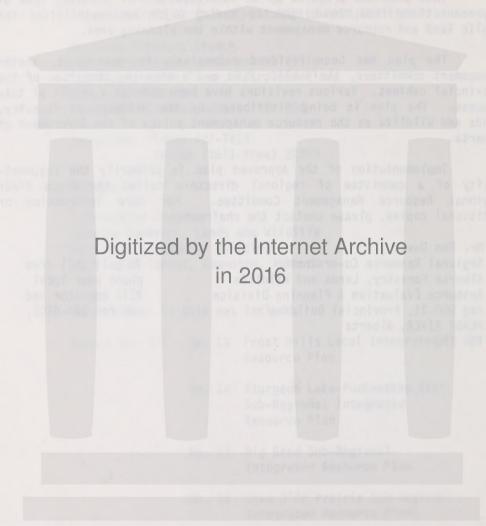
This plan was prepared by an interdepartmental planning team of representatives from those agencies having major responsibilities for public land and resource management within the planning area.

The plan has been reviewed extensively by government, senior management committees, the public, MLAs and a standing committee of the provincial cabinet. Various revisions have been made as a result of this process. The plan is being distributed by the Minister of Forestry, Lands and Wildlife as the resource management policy of the Government of Alberta.

Implementation of the approved plan is primarily the responsibility of a committee of regional directors called the Peace River Regional Resource Management Committee. For more information or additional copies, please contact the chairman:

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PREFACE

This planning document was prepared by involved government agencies and public consultants in recognition of the need for improved management of Alberta's public land and resources. It applies only to provincial public land within the Keg River Planning Area, and not to any private or federal land.

The plan presents the Government of Alberta's resource management policy for the area. It is intended to be a guide for resource managers, industry and the public having responsibility or interests in the area, rather than to be a regulatory mechanism. Resource potentials opportunities for development are identified with a view to assisting in the economic progress of Alberta. The plan is sufficiently flexible so that all future proposals for land use and development may No legitimate proposals will be rejected categorically. be considered. The provincial government is committed to serving Albertans. proposal not be in keeping with the provisions of the plan, every means will be taken to explore alternatives for accommodating the proposal in a more appropriate location, either in this planning area or on other public lands. The rejection of any proposals will only be done in writing by the Minister of Forestry, Lands and Wildlife or his designate.

A detailed outline will be provided for this sub-regional plan in order to identify the necessary implementation actions and roles. That outline will also provide for the continuing review of the plan so that it may accommodate changing needs and situations. Wherever possible, the private sector will be provided an opportunity to be actively involved in the operational delivery of the plan.

Implementation will be subject to the normal budgetary approval process with overall priorities to be established considering opportunities in both other planning areas and areas currently outside the planning process. While the plan identifies resource potentials and opportunities, the realization of these may require the dedication of major amounts of public funds. The plan will be used on the understanding that any actions required for implementation will only be undertaken as budgetary approvals are given in the normal way. The private sector will be given the first opportunity to provide any developments required.

This plan has no legal status and is subject to revisions or review at the discretion of the Minister of Forestry, Lands and Wildlife.

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1. INTRODUCTION

The Keg River Planning Area (Figures 1 and 2) was noted by the Peace River Regional Resource Management Committee (RRMC) as having potential for agricultural expansion. Based on that assessment, the area was identified in April 1984 as a priority for the development of an integrated resource plan. At that time, government agencies, public interest groups and the general public were notified and given an opportunity to participate in the planning exercise with varying levels of involvement.

An integrated decision-making process was used in the development of the Keg River Sub-Regional Integrated Resource Plan. Integrated resource planning relies on a systematic approach to problem solving. In essence, the approach is composed of three fundamental stages:

- 1) gathering information
- 2) making a choice among alternatives and
- 3) taking action

In the development of a plan, the three basic stages of the decision-making model are refined into more detailed steps with varying formal and technical requirements.

The decision-making process is used co-operatively by means of a planning team approach. Teams consist of representatives from government agencies having major responsibilities or interests in resource management on public land within the planning area.

The Keg River Planning Team included representatives from Alberta Agriculture and the Alberta Forest Service, Public Lands, Fish and Wildlife, and Resource Evaluation and Planning divisions of the Department of Forestry, Lands and Wildlife.

Consultative team members were identified and given an opportunity to present agency concerns and opinions at key stages of the planning process. Consultative teams represented agencies of the Government of Alberta and local authorities, as follows:

- Alberta Environment
- Alberta Energy, Mineral Resources Division
- Alberta Recreation and Parks
- Alberta Transportation and Utilities
- Alberta Culture

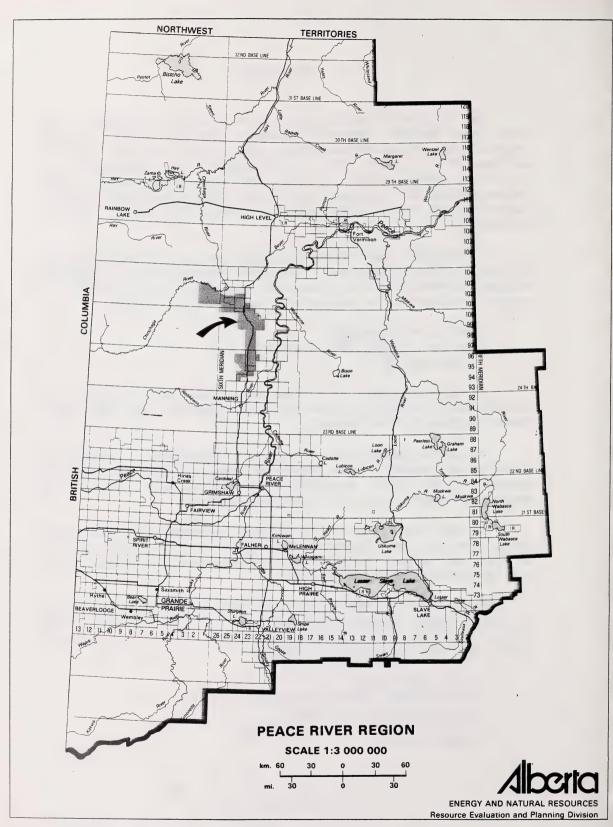


Figure 1 LOCATION OF KEG RIVER PLANNING AREA

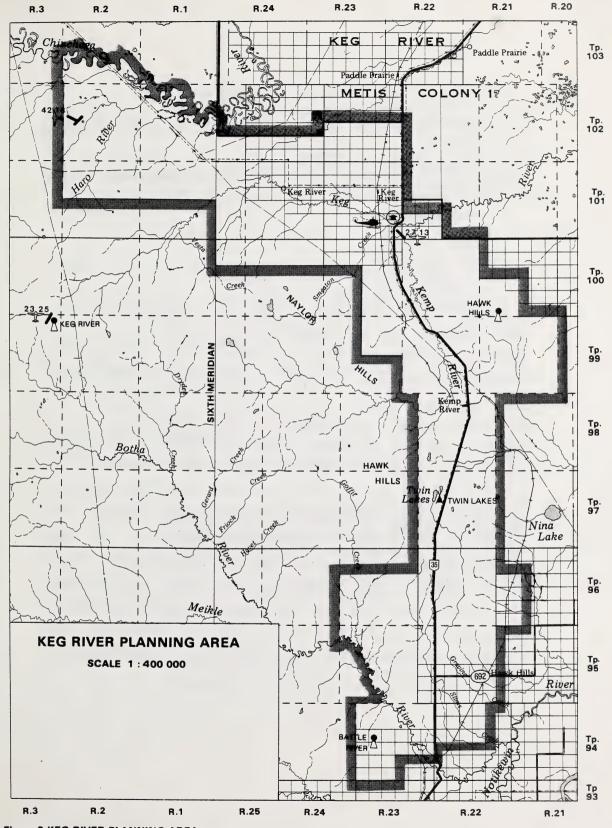


Figure 2 KEG RIVER PLANNING AREA

- Alberta Tourism
- Native Affairs Secretariat
- Northern Alberta Development Council, Northern Development Branch
- Alberta Municipal Affairs
- Alberta Forestry, Lands and Wildlife, Resource Evaluation Branch

Local Authorities:

- MLA Peace River
- MLA Dunvegan
- Mackenzie Regional Planning Commission
- Improvement District #22 Council
- Improvement District #22 Agricultural Development Committee

Throughout the development of the plan, public interest groups/associations, industries and individuals have been invited to participate in the planning process. Participation in the process involved submitting data, reviewing plan documents and attending public meetings.

This document, the Draft Plan, is a product of the plan policy and design steps of the planning process and reflects the government priorities for resource management in the Keg River Sub-Region.

The next step in the process is the production of the Final Plan. Once public and government reaction to the Draft Plan has been assessed, appropriate revisions will be made and the Final Plan produced for use by government, industry and the public. The Final Plan will apply only to land and resources vested in the Crown, both in the Green and White Areas. Patent land within the boundaries of the Mackenzie Regional Planning Commission remains under the traditional planning control of local municipalities and the Planning Commission. In connection with private land, the integrated resource plan reflects the philosophies of land management of the local authorities. The Alberta government will continue to make every effort to strengthen the existing co-ordination and co-operation with local planning authorities.

1.1 Planning Area Description

1.1.1 Location

The Keg River Planning Area is located in northwestern Alberta, north of Manning and south of High Level. It is essentially a corridor joining the Keg River and Hawk Hills settlements totalling a land area of approximately 1 683 km^2 (650 sq. mi).

The boundaries are as follows:

North - Paddle Prairie Metis Settlement and Chinchaga River

Rationale - The northern portion of the planning area encompasses the older, well-established Keg River settlement. The Keg River settlement area has reached its limit for expansion.

South - Hawk Hills Settlement

Rationale - As with the Keg River settlement, the Hawk Hills settlement has reached its limit for agricultural expansion.

East - Paddle Prairie Metis Settlement, Hawk Hills and Accelerated Land Sales Area

Rationale - This boundary joins the eastern portion of the Keg River settlement (north) to the Hawk Hills settlement (south). Not included in the planning area are the suitable agricultural lands, being settled at present (100-20-W5 and 99-20-W5), which have already undergone an integrated decision-making process (Accelerated Land Sales Program).

West - Rough topography of the Naylor and Hawk Hills.

Rationale - The boundary extends beyond the known limit for agricultural expansion. Elevation and surface expression is considered the limiting factor.

1.1.2 Resource Synopsis

Resource Inventory and Capability. The Keg River planning area is within the Lower Peace River region and has a Boreal climate with major, erratic, weather extremes day-to-day and year-to-year. The continental character of the climate occurs because the area is far from the moderating influence of large water bodies and is in the north.

More specifically, the planning area lies within three physiographic regions delineated on the basis of bedrock geology and elevation. These regions include the Peace River and Fort Vermilion Lowlands and the Clear Hills Upland.

The Peace River Lowland lies in the southern portion of the planning area and extends to the north from the Meikle River for approximately 12 km where it meets the Clear Hills Upland. The Peace Lowland, a nearly level to very gently undulating plain slopes to the southeast corner of the planning area and is drained by the Meikle River and Slims and Gravina Creeks.

Moderately well drained, Orthic and Solonetzic Gray Luvisols and Dark Gray Solods which have developed on non- to very slightly stony glaciolacustrine and lacustrotill deposits are typical of the Peace River Lowlands. Poorly drained Orthic Luvic Gleysols occur locally across the landscape. Imperfectly to poorly drained soils are not as common in the Peace River Lowlands.

The Clear Hills Upland includes much of the central portion of the study area and includes both the Naylor and Hawk Hills. This rugged, partially-fluted upland area ranges in elevation from 490 masl near Hawk Hills Grain Elevator in the southeast to over 725 masl atop both the Naylor and Hawk Hills. The topography ranges from gently undulating to moderately sloping with strong to extreme slopes occurring along the scarp face of the Naylor Hills. The southern portion of the region is drained by the Meikle River and its tributaries, and in the north by the Keg and Haro Rivers and their tributaries.

Soil development within the Clear Hills Upland is tied closely to surficial materials. Imperfectly drained, Gleyed Solonetzic Gray Luvisols predominate on lower slopes where lacustrotill and till deposits occur. On upland sites where till, residual, glaciofluvial and colluvial materials are found, pedogenic processes are poorly

developed. Moderately well to well drained Eluviated Brunisols and Brunisolic Gray Luvisols are typical of the higher elevation in the Clear Hills Upland. Extensive wetland areas are found in association with glaciofluvial deposits south of Twin Lakes. Fibrisols and Mesisols are found in association with Rego Gleysols. Extensive peat plateaus occur immediately west of the study area in the Clear Hills Upland.

The Fort Vermilion Lowland occurs north of the Clear Hills Upland and extends southward into the basin-like area between the Naylor and Hawk Hills. The region slopes to the north and east.

Within the Fort Vermilion Lowlands, pedological processes have been strongly influenced by relatively fine-textured materials, nearly-level topography, seepage from the adjacent Clear Hills Upland and the effects of ponding by beavers. The combination of the above factors has resulted in the development of widespread wetlands interspersed amongst moderately well to poorly drained topography.

Low permeability and high soil moisture has resulted in the formation of perched water tables and has encouraged the development of imperfectly drained Gleyed Gray Luvisols and poorly drained Orthic Luvic Gleysols across most of the landscape. Orthic, Solonetzic and Dark Gray Luvisols occur on better drained topography but are localized. Poorly drained, Rego and Humic Gleysols and very poorly drained, Terric Fibric Mesisols are typical of wetland areas. Soils on fluvial deposits vary from Cumulic and Gleyed Cumulic Regosols to Orthic Gleysols while textures range from sand to silty clay loams.

Climate of the Keg River study area has been viewed by many as the limiting factor to agricultural expansion. The climate of the area is best described as Boreal, characterized by long, cold winters with little precipitation and short, warm summers with a precipitation maximum during July. Continental Arctic air masses dominate during the winter while more southerly or Pacific air masses dominate during the summer months (Dutchak, 1979). Sanderson (1948) described the area as having a semiarid type of climate.

One of the principal ungulate species in the area is moose, with population densities ranging from one to four moose/km². The most important winter and spring ranges include the Battle River Tower area, the Meikle River valley, Twin Lakes/Kemp River range, the Kemp River flats, the Hawk Hills Tower area and the Chinchaga River flats.

Both mule deer and white-tailed deer occur. The prime habitat for mule deer is along water courses and the south-facing aspects of the Hawk Hills and Battle River Towers areas. The white-tailed deer is increasing in numbers; and in addition to the river and creek systems, it uses the farming edge.

The black bear is very common throughout the area. Although the grizzly bear is not numerous, it is found in the Chinchaga River, Haro River and Naylor Hills areas.

Major furbearers, in descending order of economic importance, are: lynx (found in hare habitat of dense understories near shelter of mature stands), beaver (in streams, rivers and waterbodies), fisher (in most areas with habitat diversity including a component of snags and conifers), marten (in mature conifers), coyote (ubiquitous in all habitats with good supplies of hares, grouse or mice), mink (along watercourses) and squirrels (in mature conifers).

Waterfowl nesting, although limited by a general lack of lakes and sloughs, is found along most waterbodies and streams. Staging in fall and spring is very important along the Chinchaga and Meikle Rivers, and grain fields are favoured in the fall.

Upland bird game includes ruffed, spruce and sharp-tailed grouse. The very cyclical ruffed grouse is found in diverse habitats of aspen with willow vegetation, while spruce grouse require some pine and/or spruce with aspen in the vegetation component. The sharp-tailed grouse require open areas with scattered brush, not intensively cultivated and wetland/river breaks with sedge/grass/shrub mixes.

The major sport fish species include pike, walleye, goldeye and arctic grayling and are found in the Chinchaga, Meikle, Keg and Kemp Rivers. The tributaries and feeder streams of the above-mentioned rivers, as well as Haro River, Goffit, Smeaton and Gravina Creeks provide spawning habitat for pike and grayling, with deeper ponds and beaverdams used for wintering.

The plan area encompasses the headwaters of numerous small streams originating in the Naylor and Hawk Hills. Slopes within the planning area serve as water sources sensitive to erosion and characterized by frequent slumping. Streams within the planning area are tributaries to the Peace and Hay River Basins. The headwater reaches are generally characterized by deeply incised stream courses with fast flood response whereas downstream reaches are characterized by gently meandering courses.

The native vegetation of the Keg River Planning Area is a mosaic of deciduous, coniferous and mixed forests typical of the Boreal Mixedwood Ecoregion with scattered shrubland and grassland communities. In recent years, a significant portion of the native vegetation in the vicinity of Hawk Hills and Keg River has been cleared and cultivated for annual production of cereal crops, forage and oilseeds.

Aspen forests on various parent materials predominate in the study area. Forests within the Fort Vermilion and Peace River Lowlands are on average less than 50 years old and primarily reflect frequent fires. Atop the Clear Hills Upland where fire is not as frequent because of cooler and moister conditions, aspen forests are somewhat older on average (>65 years) and are commonly found in association with white spruce. Where groundwater seepage is pronounced or the water table is near the surface, balsam poplar becomes a significant component of aspen stands and may occur as pure stands, especially along river valleys.

White spruce forests are most common atop the Clear Hills Upland where cooler and moister conditions prevail and fire frequency is lower. Aspen and, to a lesser extent, balsam fir occur as codominant species within these stands. Understories are poorly developed compared to aspen stands, but generally include low-bush cranberry, rose and feathermosses. Relic white spruce stands are found throughout the Peace River and Fort Vermilion Lowlands, usually at the base of the Clear Hills Upland. These forests have developed on a variety of surficial materials, including glaciolacustrine, lacustrotill, till, residuum and colluvium.

Sedge meadows are not extensive but are generally associated with deep organic soils that have developed within glacial meltwater channels, and in the wettest areas within willow shrubland communities.

Early works have indicated that native grasslands existed in the vicinity of the Keg River and extended in a northeastly direction towards Paddle Prairie along the Boyer River. These grasslands were cultivated by early settlers during the 1930s. Small relic grasslands exist today along the steepest south-facing slope of the Meikle River.

Present Use and Demand. The main agricultural activities in the Hawk Hills and Keg River areas at present are cereal and oilseed production and to a lesser extent livestock production. The direction of farming has changed significantly in the last 25 years. In 1961 (Maxwell, 1964), 50 per cent of all farms in the Keg River, Hawk Hills and Paddle Prairie areas were classed as cattle, hog and sheep operations while 45 per cent were classed as grain operations. At present it is estimated that at least 75 per cent of the farm operatrions are classed as grain operations while only 25 per cent are classed as livestock operations.

The agricultural capability of the Peace River and Fort Vermilion Lowlands and the lower portions of the Clear Hills Upland rate favourably when compared with the existing Hawk Hills-Keg River farm communities. Local, cultural management practices have developed over time to overcome commonly-identified, soil and climatic "limitations", and farms in the area have become and remain viable. The following table outlines relative percentages of major crops grown, as taken from the 1983/84 crop year seeded acreage reports (Alberta Agriculture, 1983).

	Wheat	Barley	<u>Canola</u>	Perennial Forage
Hawk Hills	22%	33%	30%	15%
Keg River	27%	30%	33%	10%

As general economics change and various management options are pursued, the direction of agriculture may change so that a more diversified agricultural industry develops, including cereal, oilseed, ranching and mixed operations. The study area has potential for increasing the livestock industry, as well as cereal and oilseed production in the area.

Currently, there is limited demand for additional unimproved or improved grazing within the planning area. Increased demand for grazing may become more evident as agricultural development intensifies. The planning area has potential to meet future demands, as well as any demands not met now.

The Keg River Planning Area is subject to two coniferous Timber Quota commitments, a local woodlot, numerous local timber permit holders and potential for development of the deciduous timber. The area represents a significant portion of the Quota Annual Allowable Cut (AAC)* for Forest Management Unit (FMU) P10 and a less significant portion of the AAC of FMU P06. The AAC for the FMU P10 is 70 000 m³ of which 45.21 percent (31 647 m³) is committed under Quota Certificate CTQ P10001 to Canadian Forest Products Ltd. The AAC for FMU P06 is 157 600 m³ of which 45.1 percent (71 078 m³) is committed under Quota Certificate CTQ P06004 to Canadian Forest Products Ltd. The Procter and Gamble Provisional Reserve occupies the Green Area portion of the planning area, and is currently being reviewed for development. A demand for harvestable coniferous timber exists from local residents, more so in

^{*}The Annual Allowable Cut (AAC) is based on utilization of timber to a $15\ \mathrm{cm}$ stump and an $11\ \mathrm{cm}$ top.

the Hawk Hills area than in the Keg River area, primarily as a supplement to agricultural income. Deciduous timber, primarily aspen, within the plan area has a favourable age class distribution for utilization within the next 10 to 20 years. The area contains 1044.1 ha of coniferous plantations established in 1979 under the Maintaining Our Forests program, and approximately 1 206.1 ha of coniferous plantations established in the late 1960s.

The portions of the planning area within the Procter and Gamble provisional reserve are fully committed to the production of timber. Fifty-four per cent of the AAC of P10 and 53 per cent of the AAC of FMU P06 are designated for development under the terms of the Procter and Gamble Forest Management Agreement with the balance committed under quota agreements as noted above.

The incidence of forest fires in the Keg River Planning Area is similar to the rest of the province. About 60 per cent of the fires result from human activities. The remainder are caused by lightning. Burning for debris disposal is common and is associated with land clearing. Forest protection facilities in the planning area include two lookout towers, Hotchkiss and Keg River, and a staging camp for fire-fighting crews. In the past there has been little prescribed burning other than debris disposal. However, as need and capability improve, the use of fire for silviculture purposes and to improve range and wildlife habitat is expected to increase.

Outdoor recreational opportunities are extensive within the planning area, and will occur at low levels. Hunting and fishing are the most common pursuits. A provincial campground development at Twin Lakes, which are stocked annually with 21 000 rainbow trout, attracts local residents for day use, picnicing and fishing, as well as providing overnight camping opportunities for travellers on the Mackenzie Highway and communities to the north. Notikewin Provincial park is less than 16 km from the southeastern boundary of the planning area, and provides most of the recreational needs of local residents. A small, community-sponsored picnic area is being developed along the Chinchaga River to serve people in the northern portion of the planning area.

Tourism resources in the Keg River Planning Area are limited. Highway 35, the Mackenzie Highway, is a major travel corridor through the planning area. Most tourist traffic in this area along the Mackenzie Highway is pass through traffic. The 1982 Alberta Travel Survey (a non-resident visitor survey) indicates that from May 15 to October 31, 1982, 74 044 visitors travelled the highway between Grimshaw and High Level (Travel Data International, 1983).

Two major rivers, the Chinchaga and the Meikle, may provide some opportunity for commercial operators (river rafting or canoeing).

The planning area has large reserves and production of natural gas in the Boyer and Haro gas fields, which cover $165~\rm km^2$ and $460~\rm km^2$ respectively, in the Fort Vermilion Lowlands. There are also gas fields in the vicinity, and the potential is good for further gas discoveries within the planning area.

Extensive exploration for gas to the north of Smeaton Creek has resulted in the drilling of numerous wells of which approximately 50 are producing gas and 17 are capped. Petroleum and natural gas dispositions, which cover about half of the planning area, are concentrated in the north in the Boyer and Haro fields.

Natural gas production in 1984 was about 250 million $\rm m^3$ from the Boyer field and about 135 million $\rm m^3$ from the Haro field. Gas reserves within the planning area of the two fields total approximately 14.4 billion $\rm m^3$. The main Rainbow - Edmonton oil pipeline passes through the planning area and a main gas pipeline to High Level crosses the area.

Oil sands of the Peace River Oil Sands deposit have been delineated only $10\ km$ to the south. No other minerals are known to occur in the area.

Sand and gravel resources within the planning area are limited.

From an archaeological perspective the planning area is comparatively unknown. Two, rich artifact collections have been reported for the general area, but the location of specific sites is not known. However, several areas within the planning area itself are considered to have moderate to high archaeological potential, especially for prehistoric archaeological sites. These include several topographic prominences, most notably the Hawk Hills and the northeastern edge of the Naylor Hills.

Throughout northern Alberta, prehistoric archaeological sites have a known association with topographic prominences and elevations located in proximity to waterbodies. The Chinchaga and Keg Rivers are known to have been used by natives from early history through recent periods. Therefore, traces of historic as well as prehistoric encampments and other activities are anticipated in these areas.

Historically, the planning area was opened for settlement in the late 1920s. Remains of isolated historic sites associated with homesteading may occur. Additionally, it is expected that sites associated with timber management may also be located in the area.

2. RESOURCE MANAGEMENT STRATEGY

This section provides broad resource management direction for the entire planning area.

2.1 Purpose Statement

The purpose of the plan is to ensure that co-ordinated management of resources is undertaken within the planning area. The plan will make the best use of resources while minimizing any negative impacts that use or development of any resource may have on other resources. More specifically, the plan will realign the Green Area boundary to provide additional land suitable for agricultural expansion, as well as a permanent land base for long-term forest and wild-life management.

2.2 Broad Resource Objectives and Guidelines

The resource objectives broadly reflect government priorities for the Keg River Planning Area within the context of the Peace River region. The associated common, resource management guidelines are intended to aid in the integration of objectives and to minimize conflicts.

2.2.1 Agriculture

Objectives

- 1. To make available additional public land for agricultural expansion.
- To supply a portion of the demand expressed by individuals for expansion of existing farm operations and to allow establishment of new farm units.

<u>Guidelines</u>

- The White Area will include lands for till cropping, improved and unimproved grazing.
- 2. At an operational level, agency referrals will be made to establish appropriate development guidelines during implementation of the plan.

- 3. All grazing leases, permits and licences may require an approved range management plan prepared by the Public Lands Division and/or the Alberta Forest Service in consultation with other affected government agencies.
- 4. Improved and unimproved grazing may occur on public land throughout the planning area where compatible with other resource objectives.

2.2.2 Watershed

Objectives |

- To maintain water quality, quantity and flow regime as it relates to:
 - the provision of water for onstream and downstream users
 - provision of habitat for fish, aquatic furbearers, water-fowl and other wildlife populations
 - provision of quality recreation experiences
- To co-ordinate watershed management at an operational level to meet specific needs of resource users; for example, requirements for drainage and wetland habitat.
- 3. To promote soil conservation.

- Buffer strips, retention and detention areas for surface water control will be incorporated into the planning of resource management projects.
- In cases requiring assessment of land drainage potentials or implementation of such programs, Alberta Environment will consult Alberta Forestry, Lands and Wildlife and other affected agencies.
- Surface disturbances and intensive land uses will be discouraged on the slopes of the Naylor and Hawk Hills.
- 4. Management strategies will be provided during pre-planning to prevent or minimize the impact of land use upon water quality.

2.2.3 Ecological Resources

Objective |

1. To protect both representative and unique areas of the natural environment having provincial significance for recreational, scientific or educational use.

Guideline

 Resource uses in the planning area will be monitored using the Alberta Forestry, Lands and Wildlife referral system. Areas determined to be of ecological significance may be placed under reservation or notation.

2.2.4 Fisheries

Objective 0

1. To maintain optimum and viable populations of the fish species in all fish bearing streams and lakes.

- 1. Refer to the Watershed Guidelines (Section 2.2.2).
- 2. Retain important wetland areas and streamside land for maintenance of water quality and natural stream flows.
- Fisheries regulations will be enforced to ensure that consumptive uses comply with regulations and that harvest does not exceed allowable limits.
- 4. Fish and Wildlife Division will participate in the departmental referral system to ensure that the interest of the fisheries resource is addressed.
- 5. Mitigation and habitat enhancement (e.g. reconstruction of streambanks, fencing along streams, the addition of boulders to channels, and the stabilization of banks and slopes) should be considered whenever resource activity adversely affects important habitat areas.

2.2.5 Historical Resources

Objective

1. To protect historical resources from potential or actual impact related to further resource developments and to conserve these resources for future generations.

Guidelines

- 1. Resource uses in the planning area resulting in disturbance of the land surface may require that Historical Resources Impact Assessments be conducted before development occurring, as outlined under the <u>Historical Resources Act</u>, Sec. 33(2).
- 2. The Archaeological Survey of Alberta, Resource Management Section will participate in the Alberta Forestry, Lands and Wildlife referral system to review proposed development projects within those portions of the planning area considered to have high historical resource potential.

2.2.6 Access

Objective

1. To provide public access to resource development while recognizing wildlife and environmental values.

- 1. The development of public access routes will be planned by Alberta Transportation and Utilities, Alberta Forestry, Lands and Wildlife, and Alberta Environment. Following completion of the route plans, other affected government agencies will be informed of the location of the roads, and will have an opportunity to provide comments to Alberta Transportation and Utilities.
- Industrial access will be co-ordinated through the Alberta Forestry, Lands and Wildlife referral system, so that common corridors and/or existing grid networks are used.

2.2.7 Mineral Resources

Objectives

- 1. To provide opportunities for the minerals industry to define the extent of, and develop or produce the natural gas resource of the Haro, Boyer and Hawk gas fields.
- 2. To provide opportunities for exploration and development of all minerals in previously-unexplored areas or geologic formations.
- To provide for the orderly development of sand and gravel resources.

Guidelines

- Proposals for energy, mineral and sand and gravel developments will be evaluated and monitored through the Alberta Forestry, Lands and Wildlife referral system to ensure that there are accepted standards, practices and legislation associated with environmental protection.
- 2. Lands will be reclaimed in accordance with the <u>Land Surface</u>

 <u>Conservation and Reclamation Act</u>, RSA 1980. Follow-up inspections will be done before a Reclamation Certificate is issued.
- 3. Sand and gravel resources will be retained under public ownership.

2.2.8 Recreation

Objectives

- To identify and manage areas with the potential for future recreation needs as demand warrants.
- To provide opportunities for the development of commercial recreation consistent with provincial objectives and policies which complement existing recreation opportunities such as guiding and outfitting.
- 3. To provide hunting and fishing opportunities.

Guidelines

- Dispositions along the Kemp, Chinchaga, Meikle and Keg Rivers will be evaluated to ensure they are compatible with recreational opportunities.
- 2. Development of future recreational sites will be co-ordinated by policies and procedures of Alberta Recreation and Parks, Alberta Transportation and Utilities, and Alberta Forestry, Lands and Wildlife.

2.2.9 Timber

Objectives

- 1. To identify and stabilize the forest land base for long-term forest management.
- 2. To identify and manage areas for industrial consumption and local use on woodlots to meet demands for timber. Demand for permit logging by local residents is approximately 40 000 $\rm m^3$ per year while demand for industrial consumption is approximately 60 000 $\rm m^3$ per year.
- 3. To regulate the timber resource for sustained-yield, timber harvests while promoting a forest environment of high quality.
- 4. To reforest cutover areas and initiate afforestation projects on designated forest lands suitable for coniferous tree growth.
- 5. To protect the forest from damage and destruction by fire, insects, disease or other causes.
- 6. To promote full utilization of the timber resource.
- 7. To maintain existing timber supply commitments to industry while providing opportunities for expansion.

Guidelines

 Areas included in the Forest Management Units P10 and P06 will be managed under the Timber Quota Policy and the Procter and Gamble Provisional Reserve Agreement subject to the forest management unit Management Plans for P10 and P06, respectively.

- 2. Aggressive prevention, detection, pre-suppression, and suppression activities will be employed to protect forest resources from fire, insects and disease.
- 3. Productivity will be continued and improved by the employment of silvicultural practices such as:
 - Clear cutting
 - Prescribed burning
 - Selective cutting
 - Stand improvement techniques
 - fertilization
 - spacing control
 - vegetation control
 - genetic improvement
 - Species conversion
 - Site drainage
- 4. Timber stands will be monitored for insect and disease occurance and effective physical and/or biological controls applied as required.
- Salvage logging will be utilized in the event of fire, insect or disease damage and when industrial activity endangers timber. Salvage logging will occur when and where it is economically feasible.

2.2.10 Tourism

Objectives 0

- To increase the use of the planning area by resident and nonresident visitors by encouraging a variety of tourism/recreation opportunities.
- 2. To allow for the development and/or expansion of tourism and recreational facilities, particularly by the private sector.

<u>Guidelines:</u>

- Disposition of public land to the private sector will be considered for development of tourism and recreational facilities.
- 2. Tourism opportunities such as river rafting, canoeing, snow-mobiling and associated support services will be permitted and accommodated in the planning area, wherever possible.

- 3. Funding assistance may be available to The Land of the Mighty Peace Tourist Association or other non-profit organizations to develop an Exploration Guide for the Mackenzie Highway.
- 4. Planning advice will be provided to assist existing and potential operators of tourism facilities and services. Marketing and demand information, and promotion advice will be supplied when available.

2.2.11 Wildlife

Objectives

- Maintain optimum viable populations of all indigenous wildlife species (including ungulates, carnivores, furbearers, game birds, birds of prey and non-game species).
- 2. Maintain key wildlife ranges identified for wintering, spring feeding, calving and migration.
- Maintain diversity in vegetation composition and successional stages.

- 1. Participation in the Alberta Forestry, Lands and Wildlife referral system by Fish and Wildlife Division will ensure awareness of critical and problem areas in inventory and enforcement.
- 2. Constructive harvesting techniques and enforcement of regulations will be used to maintain viable populations.
- 3. The wildlife damage control program will be maintained.
- 4. Mitigation and habitat enhancement should be considered whenever resource activities have an adverse impact on important wildlife ranges (e.g., closing access, rerouting transportation corridors, additional, irregularly-edged clearing around wellsites to ensure the presence of forage for ungulates, and the placement and design of borrow pits to serve game birds, beavers and ungulates).
- 5. Fish and Wildlife Division will encourage the use of timber harvesting and silvicultural practices that are complementary to wildlife habitat.

3. LAND ALLOCATION - RESOURCE MANAGEMENT AREAS (RMAs)

Following the identification of the broad resource objectives for the planning area, a land allocation scheme was developed to allow the achievement of those broad resource objectives. It was determined, by the planning team, that the Keg River area be divided into three RMAs reflecting distinct, resource management emphases or priorities (Figure 3). RMAs will be managed in the multiple-use context. However, the differences in emphasis will be demonstrated through specific intent statements, sets of objective and corresponding management guidelines for each RMA.

The following sections deal with each RMA individually.

3.1 Keg River/Hawk Hills RMA

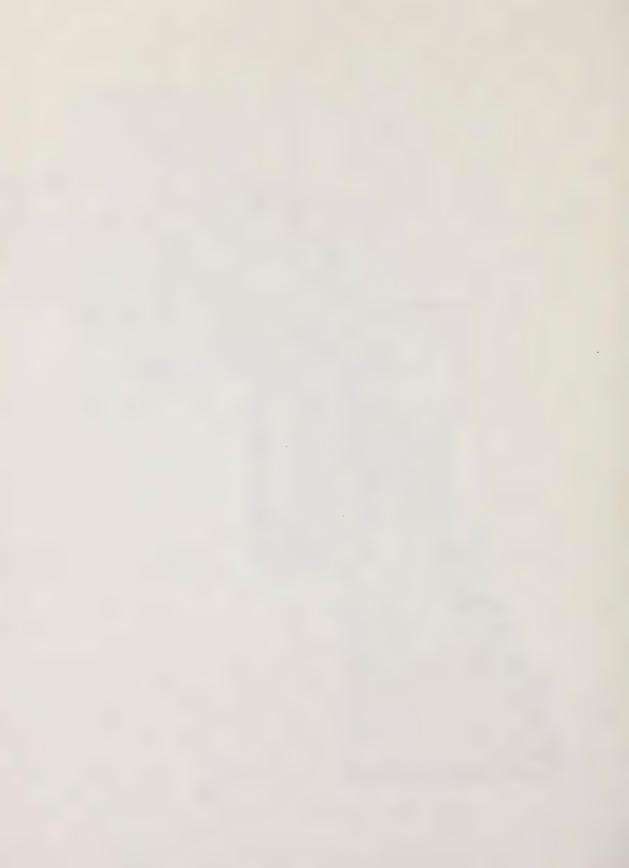
This RMA consists of an expanded agricultural area in the vicinity of the existing communities of Keg River and Hawk Hills located in the northern and southern portions of the planning area, respectively.

3.1.1 Management Emphasis - Agricultural utilization with disposition of lands suitable for till cropping or domestic grazing.

3.1.2 Objectives

- To allocate suitable lands in order of priority for expanding, relocating and beginning farm operations.
- To encourage the development of livestock operations based on a mixture of sale dispositions and grazing lease dispositions.
- To provide a supply of primary forest products for use by local residents.
- 4. To maintain the integrity of the fisheries habitat.

Fig. 3 Land Allocation-Resource Management Areas



5. To maintain population levels for the following species:

White-tailed Deer		100
Mule Deer		10
Ruffed Grouse - spring		500
- fall	2	500
Sharp-Tailed Grouse - spring		300
- fall		900
Spruce Grouse - spring		50
- fall		130

6. To maintain potentially-harvestable numbers of the following species:

Mink	25
Weasel	190
Coyote	60
Red Squirrels	250
Marten	4

3.1.3 Guidelines

- Suitable agricultural lands will be identified by detailed, operational soil surveys and made available to the farming community for till cropping or ranching in the form of sale dispositions and lease dispositions.
- 2. Livestock operations, based on a mixture of sale and grazing lease dispositions will be focused in the area located in n1/2 95-22-W5 and parts of 96-22-W5 including sections 3,4,5,8,9,10, 1/2 15, and SE16.
- 3. All lands proposed for agricultural disposition will be evaluated by the Public Lands Division, the Alberta Forest Service, and the Fish and Wildlife Division prior to disposition.
- 4. Crown lands suitable for till cropping and improved grazing, and with no land-use restrictions, will be sold.
- 5. Crown lands suitable for till cropping and domestic grazing, and with land-use restrictions, will be made available under lease disposition.

- 6. Timber sales on lands suitable for agriculture, and where liquidation of timber is required, will be limited to a two-year term.
- 7. Approximately one twenty-fifth of Hawk Hills Long-Term Liquidation Area (Figure 3) will be logged each year and subequently made available for agricultural use.
- 8. Areas suitable for agriculture, and supporting a valuable forest crop (minimum $860~\text{m}^3$ coniferous/quarter section and/or 50~acres or more of regenerating coniferous timber), will be held under reservation until the crop is harvested at which time the land will be made available for agricultural disposition.
 - (a) Notwithstanding guideline 8, lands stocked with regenerating coniferous stands may be made available for agricultural disposition, in whole or in part, if warranted by demand.
- 9. Areas not suitable for agriculture, and which contain significant volumes of timber (minimum 860 m³ coniferous per quarter section or 50 acres or more of regenerating coniferous timber), will be identified and will remain in public ownership to provide local residents with a continued supply of forest products.
- 10. Harvesting of merchantable coniferous timber will be completed on salable agricultural lands before disposition of the land.
- 11. The White Area lands within Procter and Gamble's provisional reserve will not be sold until the company's rights have been relinquished.
- 12. Forest plantations will be retained until no longer required.
- 13. An efficient road service network to salable lands will be planned in consultation among Public Lands Division, Alberta Transportation and Utilities, and Alberta Environment. Alberta Forest Service will be notified of the location of roads.
- 14. Expansion of agriculture settlement areas will occur in "block-type" development as much as possible to alleviate fire protection concerns.

- 15. Burning and brush disposal on agricultural and industrial dispositions will be closely regulated.
- 16. Lands within a 200 m buffer area from the top of the breaks of the Keg River, and a 100 m buffer area from the top of the breaks of Smeaton and Gravina Creeks, will remain under public ownership to maintain wildlife and fisheries resource.
- 17. On other major creeks or lands, Ecological Corridor Agreements or permanent reservations will be used to accommodate surface drainage networks, protect stream ecology and provide diversity of wildlife habitat.
- 18. During implementation planning, Fish and Wildlife Division will identify all waterbodies and streams requiring referral of applications for disposition within 75 m of the breaks to ensure protection of stream and migration corridors for ungulates.
- 19. Public Lands Division will consult Alberta Environment before posting any lands for sale. Where potential drainage problems are seen, posting will not proceed until a proper drainage and water management program has been developed by Alberta Environment.
- Non-conforming land uses under disposition at present will be reviewed and appropriate management guidelines will be applied upon renewal.
- 21. The District Office of Fish and Wildlife Division will respond to problem wildlife concerns reported by landowners, and will attempt to provide control measures to alleviate the problems. Control measures may be used for wolves, bears, beavers or other species.
- 22. Public Lands Division will notify Fish and Wildlife Division before posting lands for agricultural sale or lease so that trappers on registered lines can be notified of deletions from their areas. Fish and Wildlife Division will then issue a letter to the senior trapper which will clearly identify the area deleted, the effective date of deletion and details of sale or lease.

3.2 Naylor Hills RMA

This RMA consists of a corridor between the Keg River and Hawk Hills communities, as well as areas west of each community.

3.2.1 Management Emphasis - Activities related to sustained-yield timber harvesting, wildlife and fisheries management, watershed management, domestic grazing, recreation and minerals exploration and development, will predominate.

3.2.2 Objectives

- 1. To provide a supply of primary timber products including sawn timber, post and pole timber, Christmas trees and transplants, as well as expansion opportunities for the timber industry.
- To meet existing timber supply commitments to quota and FMA holders.
- 3. To provide opportunities for both improved and unimproved grazing on suitable lands.
- 4. To maintain fisheries habitat and the integrity of all fishbearing streams (Haro and Keg Rivers, Smeaton, Gravina, Scully and Goffit Creeks.
- 5. To maintain stocked trout in Twin Lakes (21 000 rainbow trout annually).
- 6. To maintain important moose winter ranges on all land west of the Meikle River, the Hawk Hills Tower area and all land in the block west of the Kemp River.
- 7. To maintain grizzly bear range on the steep slopes of the Naylor Hills and land west of the Haro River.

8. To maintain present population levels for the following species:

Moose	500
White-tailed Deer	100
Mule Deer	80
Ruffed Grouse - spring	2 000
- fall	10 000
Sharp-Tailed Grouse - spring	400
- fall	1 200
Spruce Grouse - spring	400
- fall	1 000
Black Bear	106
Grizzly Bear	4-5

9. To maintain potentially-harvestable numbers for the following species:

Mink Weasel	200 4 200
Coyote	73
Wolves	9
Lynx - high cycle	52
- low cycle	19
Red Squirrels	10 000
Marten	200
Fisher	31
Wolverine	1

- To maintain habitat and migration corridors for wildlife along stream courses.
- 11. To provide opportunities for the use of prescribed burning to meet land management objectives.
- 12. To provide opportunity for upgrading and expanding the Twin Lakes Recreation Area if demand warrants.

3.2.3 Guidelines

1. This RMA will be added to the Green Area and managed according to the regulations and policies governing the Green Area.

- 2. Portions of this RMA south of the 25th baseline will be added to the PO6 management unit and managed for miscellaneous timber use by local residents.
- 3. Portions of this RMA in TWP 101-25-W5, TWP 100-23-W5, TWP 100-22-W5 and in TWP 101-24-W5 will be added to the P10 management unit and managed for miscellaneous timber use by local residents.
- 4. Access for timber production operations will be determined through cooperative planning efforts. This approach will maximize the benefits from common transportation corridors and minimize the impacts associated with multiple surface disturbances. The publication Resource Road Planning Guidelines (Alberta Energy and Natural Resources, 1982) is cited for reference.
- 5. Grazing use will be encouraged on lands adjacent to existing agricultural operations.
- 6. Grazing will not be permitted on lands where such use would endanger valuable coniferous regeneration or stocking.
- Grazing will not be permitted along the slopes of the Naylor or Hawk Hills.
- 8. Grazing dispositions will not be issued on areas of important grizzly range (land west of Haro River).
- 9. Grazing dispositions will not be issued adjacent to fish-bearing streams, important migration routes, calving areas and wintering areas.
- 10. All existing, long-term dispositions will be reviewed, and appropriate management guidelines will be applied upon renewal.

3.3 River Corridors RMA

Included in this RMA is land within 400 m beyond the top of the breaks (defined by fluvial ecosections) on the following rivers:

- Meikle River fluvial ecosection F2
- Kemp River fluvial ecosections F3,F4
- Chinchaga River fluvial ecosection F1

(Figure 3)

3.3.1 Management Emphasis - Retention of recreational and aesthetic values associated with river corridors; supporting significant fisheries and wildlife populations; and protecting riparian lands where erosion, slumping and flooding occur, or where buffers are required to address water quality concerns.

3.3.2 Objectives

- 1. To provide opportunities for extensive recreation such as hunting, fishing and canoeing.
- 2. To minimize soil erosion and to maintain water quality.
- 3. To maintain habitat for grayling, walleye and pike in Meikle and Chinchaga rivers, and grayling and pike in the Kemp River.
- 4. To maintain important moose wintering and spring habitat.
- 5. Together with the Naylor Hills RMA, to maintain grizzly bear range along the Chinchaga River.
- 6. To maintain the population levels for the following species:

Moose	100-200
White-tailed Deer	70
Mule Deer	70
Ruffed Grouse - spring	200
- fall	1 000
Sharp-Tailed Grouse - spring	100
- fall	300
Spruce Grouse - spring	100
- fall	300
Black Bear	20
Grizzly Bear	1

7. To maintain potentially-harvestable numbers for the following species:

Mink	45
Weasel	370
Coyote	15
Wolves	2
Lynx - high cycle	5
- low cycle	2
Red Squirrels	2 000
Marten	37
Fisher	3

8. Travel off trails and roads with motorized vehicles should be discouraged and possibly, in future, restricted to designated routes.

3.3.3 Guidelines

- 1. No new grazing dispositions will be granted in this RMA.
- 2. Refer to the timber harvesting guidelines for the Naylor Hills ${\sf RMA}$ (Section 3.2.3).
- 3. All existing, long-term dispositions will be reviewed and appropriate management guidelines will be applied.
- 4. Appropriate legislation and enforcement should be effected to minimize wildlife harassment and soil erosion from unrestricted use of motorized vehicles.

4. GREEN AREA BOUNDARY

The province is divided into two main administrative areas, the White Area and the Green Area. Both areas are managed in a multipleuse context including conservation, recreation, forestry, wildlife habitat and agriculture. There is, however, one basic, important difference between the two areas:

White Area: is generally settled or suitable for settlement. It is usually associated with more intensive uses such as developed agriculture, urban centers and extensive infrastructure.

Green Area: is largely permanent forest. It is usually associated with less intensive uses such as logging, wildland recreation and limited undeveloped agriculture (grazing only).

The main task of the planning team, following a full evaluation of the planning area, was the refinement of the Green Area boundary (Figure 4). The administrative adjustment is necessary to accommodate the recommendations in the plan for agricultural expansion. The result is an increase in the White Area and subsequent decrease in the Green Area.

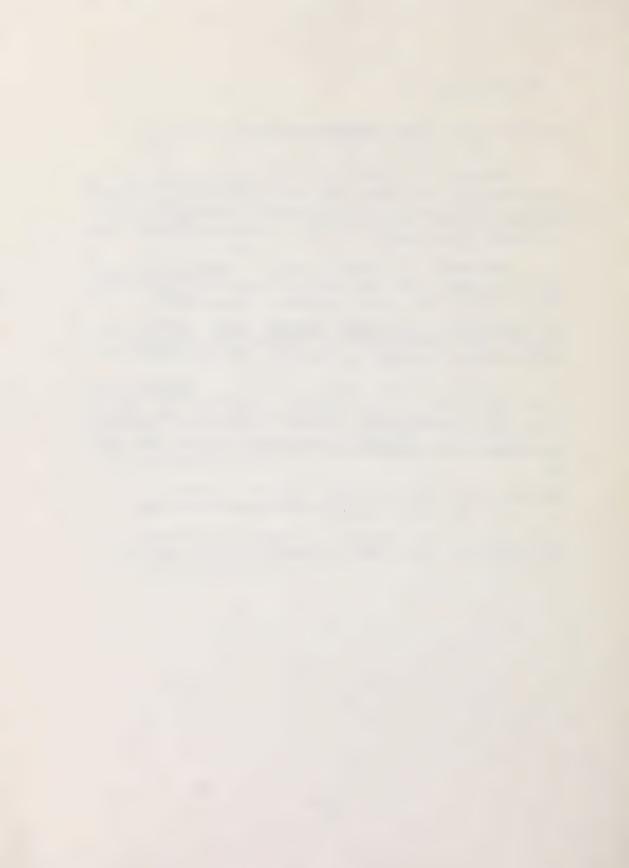
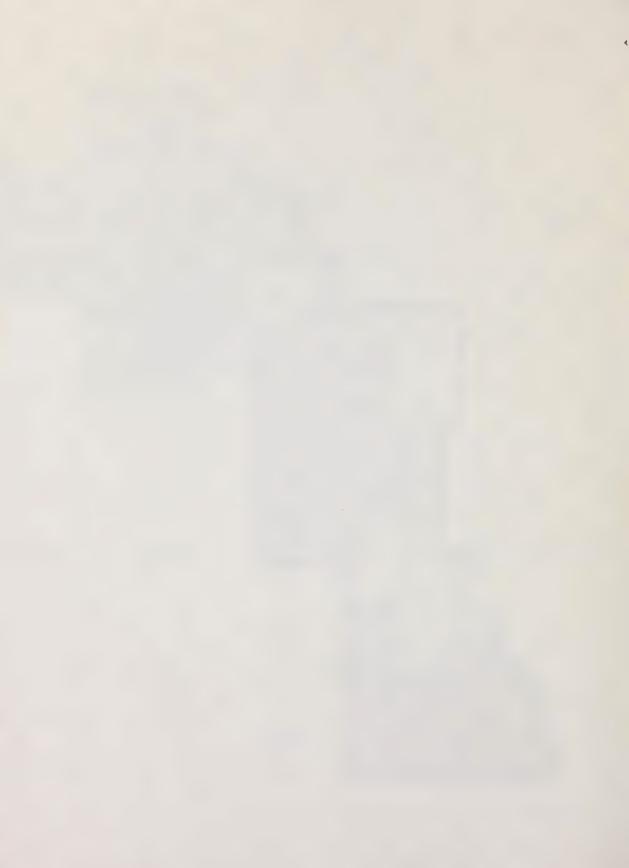


Fig. 4 Revised Green Area Boundary



IMPLICATIONS

The intent of the plan is to make available additional public land for agricultural expansion. This demand is mainly for land suitable for till cropping, but there is a latent demand for domestic grazing. It is important to note that agricultural expansion cannot take place in isolation for other resource concerns within the area. Increased agricultural production, through expansion, will affect timber availability, watershed management and fisheries and wildlife management. Therefore, the plan should result in the optimum use of resources, reflected by capability and demand.

During the planning process, the planning team established the agriculture land base by redefining the Green Area boundary. An area of approximately 38 785 ha (95 840 acres) of unsettled land with agricultural capability was identified. A total of 19 490 ha (48 160 a.) is in the White Area at present. The remainder, 19 295 ha (47 680 a.), are recommended for transfer from the Green Area to the White Area.

By firmly establishing this boundary, benefits reach far beyond the agriculture resource. For example, it has been a concern of the AFS, that the management of the timber resource along the Green Area boundary was difficult, if not impossible, at times. This concern was due to the constant erosion of the permanent, forest land base as a result of agricultural expansion into the Green Area. The Green Area boundary established in the plan focuses the agriculture expansion activities and allows the AFS to manage with confidence the timber resource along that boundary. The total Green Area land equals 109 362 ha (270 240 a.) of which 15 623 ha (38 400 a.) was obtained in a recommended transfer from the current White Area.

While liquidation is occuring within the planning area, there will be enough timber to meet demand. However, when the liquidation has been completed, a shortfall in the timber supply may occur.

A concern expressed by local residents to have a supply of timber available for their use is satisfied by the establishment of the Hawk Hills Long-Term Liquidation Area. It will provide timber to local residents for 25 years while clearing the land for agricultural use.

The concerns expressed by residents of the Keg River and Hawk Hills communities dealt with making land available for future expansion and for their children. The plan recognizes this concern and identifies that land will be made available for expanding, relocating and beginning farm operations.

The recommended expansion of the agricultural land base cannot be achieved without a corresponding decrease in the land base of other resources. The proposed conversion of land naturally vegetated at present will, for instance, lead to the loss of 100 to 150 moose, 100 marten, 1 400 ruffed grouse and unknown numbers of goshawks and woodpeckers. Other resources, like water and fisheries, will have increased potential for quality loss. However, careful planning, with conscientious adherence to guidelines and respect for environmental concerns by agencies and land holders, should mitigate the effect.

Increased pressure for recreational hunting and fishing, and a possible subsequent increase in violations of Fish and Wildlife Regulations may warrant more attention to management and enforcement. There could also be an increase in the number of complaints about problem wildlife (beavers, bears and wolves).

Environmental sensitivity along watercourses was identified by planning team members and consultants as a concern for the planning area. Recognizing this, the planning team used an ecologically-based map to determine areas requiring special protection. The result was the identification of a river corridor area which restricts use of the land in river floodplains, as well as protects steep valley walls from erosion. This area conventiently corresponds with important fisheries and wildlife areas and areas with potential for recreation. This special river corridor designation occurs on a total of 12 464 ha (30 800 a.), of which 4 305 ha (10 640 a.) are in the White Area and 8 158 ha (20 160 a.) in the Green Area.

Protection and habitat enhancement along streams may increase the costs borne by livestock producers, if they are responsible for all fencing and water development costs.

In summary, the recommendations in the plan represent an optimization of resources within the Keg River planning area. Although some adverse impacts may occur on certain resources, those impacts will be mitigated through close attention to the resource management objectives and guidelines included in the plan.

PLAN MANAGEMENT

General administrative procedures and mechanisms required for plan management, monitoring and amendment are outlined in this section. Detailed program and project implications and associated benefits and costs incurred as a result of this plan will be contained in a supplemental implementation document to be prepared by the Peace River Regional Resource Management Committee. This document, subject to approval by the Government of Alberta, will complement the plan.

6.1 General Administration

The Keg River Sub-Regional Integrated Resource Plan will become operative within the terms of appropriate legislation, regular programs and activities of the government, operational plans, specific developed projects, referral processes and administrative bodies. The RMAs provide a means of processing applications for new dispositions of public land within the planning area. Existing systems for referral and interdepartmental review will apply to the plan. Resources will continue to be administered by the departments responsible, in line with the provisions of the plan including resource management guidelines and any subsequent operational plans.

Participating government management agencies will have several responsibilities to ensure that this plan is delivered effectively. It will be their responsibility to deal with any conflicts or concerns with respect to implementation or interpretation of any of the provisions in the plan. The responsibilities are outlined by subject area below.

Referral Systems: Participating, government management agencies will ensure that existing referral systems of the Alberta government (e.g., Alberta Energy and Natural Resources, 1981a, 1981b) are adequate to encompass all affected or concerned agencies.

<u>Plan Monitoring</u>: The Keg River Sub-Regional Integrated Resource Plan will be reviewed annually by the Peace River Regional Resource Management Committee to:

-- assess the relevancy of the stated resource objectives in light of changing conditions;

- -- assess the resource management guidelines and referral procedures;
- -- assess agency operational plans to ensure that they are consist with the resource management area intents, objectives and guidelines; and
- -- recommend amendments to the Integrated Resource Plan and future actions required to maintain or promote government, resource management activities in the planning area.

An annual report will document changes in the plan. The report will also highlight the previous year's activity in the planning area, including the number, type and location of referrals and what conflicts or concerns were addressed and resolved. The report will also indicate what might be expected to be accomplished in the planning area during the next year. The report may be deferred if it is not needed because of a lack of activity or progress on government, resource management objectives within the planning area.

A major plan review by the Peace River Regional Resource Management Committee will occur at five-year intervals to facilitate:

- -- a comprehensive assessment of all aspects of the plan, including but not limited to broad, resource management objectives, and the boundaries and intents of resource management areas;
- -- a public review on the same basis as in the development of new integrated resource plans; and
- -- a statement recommending amendments to the plan and future actions required to maintain or promote government, resource management activities in the planning area.

A report will document all amendments. Major plan reviews may be undertaken more or less frequently than every five years if major resource policy commitments or developments of program initiatives require them.

Amendment Procedures: Changes to the boundary of the planning area, the broad resource management objectives and the boundaries and intents of resource management areas will require a major amendment to the plan. An amendment to the plan may be required as a result of an annual review, major five-year review, government request or a request from an individual, group or organization outside the government.

Proposed amendments to the plan from outside the government should be made by formal application to the Assistant Deputy Minister of the Resource Evaluation and Planning Division, Alberta Forestry, Lands and Wildlife.* Opportunities for public review of proposed amendments to the plan will be provided before changes are approved by the government. Amendments which entail a major policy decision or a change to the basic intent of the plan may be forwarded by the Minister of Forestry, Lands and Wildlife to the Cabinet Committee for approval.

^{*}Guidelines for preparing requests for amendments to integrated resource plans are available upon request.



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